NBC NEWS-STS-26 LAUNCH (11:20 A.M E.T -11:59 A M E.T) (9-29-1988)

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From September 29th, 1988 NBC News Live coverage of the Launch of STS-26 which was the first post Challenger disaster mission. This was the 26th Space Shuttle mission. Reported by NBC NEWS TOM BROKAW.

- Coverage runs from 11:20 A.M E.T - 11:59 A.M E.T

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and he'll say go or no go from that room standing by as well with my colleague nbc science correspondent robert bazelle robert it does look better for the weather at this hour i gather that's right tom there's no problem with the weather here at the kennedy space center at cape canaveral there's some problem with some of the transatlantic sites that's where they would land in an emergency but they uh there's one in spain that's fine there's no problem at edwards air force base the early problem was with upper level winds which as you mentioned were too light which might have been a problem because the computer software on board the discovery couldn't handle them they've done an analysis of the johnson space center in houston uh apparently they think they can handle the current situation there was no indication that they really got within acceptable limits but they think they can handle it now and it looks like a goal for launch in terms of weather all right thank you very much bob azzell even with these holes that we've been experiencing all morning long nasa has been clicking right through its predetermined schedule it got the astronauts up on time this morning even though those winds were unacceptable at an early hour they had breakfast and then they got into their pressure suits and then that familiar picture that we have not seen for such a long time in fact 32 months these are the five astronauts from discovery who are all veterans they represent the very best of breed in the american space program nasa wants nothing to go wrong this time they're led by navy captain rick houck pilot from the air force mission specialist all of them have been in space before in the shuttle program no civilians on this flight whether there ever will be again that's a question that remains of course we want to tell you that they are in the orbiter right now they're going through their checklist and here going through our checklist with us this morning two veterans of the american space program one of whom has been with us before dr joe kirwan of course who is no longer with nasa but he is now with lockheed and al o'hara who had to make these decisions as a launch director once before mr harold let's begin with you if we can this morning there are a lot of constraints on the conditions for launch today and they're not going to let anything be marginal do you think

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let anything be marginal do you think that these kinds of constraints will continue if they have two or three or four or five successful launches in a room i don't think so tom on the second flight of this vehicle we're already planning to reduce the testing based upon the in-flight data so it's obvious that we need to be conservative this time but on future flights the checkout time will be reduced in the orbiter processing facility and as the launch rates go up so i'm very confident that after this flight we get back in flight again gather data we'll be able to reduce that turnaround time joe kirwan there have been about 500 modifications on the space shuttle but people are going to look and say what's different but the design remains fundamentally the same doesn't it sure it does yeah we can't go through all 500 mods but it's it's constantly improving a given design is is a good way to go and uh and i think that's the way the soviets have gone in in in their program to stay with the old designs and constantly improve them and what about what's happening with the space program itself after the challenger did the program take a hit in terms of people being committed to it who might now go into other scientific endeavors yes i think so nasa has found it more difficult to uh recruit the brightest young engineers and scientists uh but that's that's a temporary thing you know i've talked to a lot of a lot of old friends and colleagues this morning from the mercury and gemini days and uh there's been a good deal to talk about about how wonderful it was in the old days and can we ever get back to those good old days the answer i think is let's get ahead to some good new days i'm looking forward to seeing an eight-person international space station crew launch out of here and the prospect of that will motivate people and make them want to come work for nasa you sat here with me on so many occasions in the past joe both here at edwards in the landing did we just allow the american people and did i become in a way i suppose too

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did i become in a way i suppose too complacent about this very complex procedure and high risk adventure going into space oh i don't know i suppose we all did not believe that we said in those early days we wanted the shuttle to become routine we wanted a shuttle launch to be well maybe a little bit more exciting than the launch of a of a continental or a delta jet out of orlando maybe it will never be one directory receive a goal from all elements let's listen now to launch control who is the uh deputy director of the national space transportation system and the head of the mission management team uh we'll be picking up the count down clock at 11 28 at the t minus nine minute point which would give us a liftoff time at 11 37 uh eastern daylight time this morning during this period recorders which document the operation of the final minutes of the countdown and the flight recorders have been turned on all right so there has been one minute now countdown we're going to resume the countdown at t minus nine at 11 28 and then we'll be going at 11 37 if all conditions remain in place we're here at the kennedy space center in the nbc booth you heard so much about the o-rings those were the real improvements of course in the design of this space shuttle system here's an old o-ring i'll give you some comparison now and here is the improved version of it i've got to be careful because i'm not really an engineer in fact a lot of people who know me will say this guy can't screw in a light bulb and what's he doing talking about o-rings the fact of the matter is that you can see that the that the new one is a much heavier piece it's got three pins where there were two before and that of course made the big difference they hope in the solid rocket boosters we want to show you now what those solid rocket boosters look like they are the two roman candles in effect which are on either side of the stack and when they fire off

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and when they fire off that lifts the orbiter off the pad they are so powerful that they have to have some flex built into them but what happened the last time is that they blew apart because of adverse weather conditions they had been cold and they stiffened up and that's what caused the challenger disaster so they've made improvements in that in the solid rocket booster they've made improvements in the orbiter as well and they've made improvements in the big external tank that's the big brown tank that has uh all the fuel for the main engines which are necessary once they get into orbit and also on on liftoff as well we're going to show you what we're talking about here this is the model now there there are the o-rings that you can see and that's where the gas escape from this is the model that we're talking about this is the orbiter itself we have to go through this again the big external tank which was painted orange originally then they discovered they didn't need the paint so they saved the weight and these are the solid rocket boosters which they hope can be recovered and they've added a third o-ring to these sections because they take so much stress on liftoff it has to have some kind of give and what happened last time it just simply wasn't the flexibility they came apart and it ignited this entire apparatus here which is the equivalent of an atomic bomb i mean it weighs 40 what four million five hundred thousand pounds at liftoff so you know what happened at that time so they think that they made the adequate arrangements they've also made an improvement in the landing gear so if they have what they call an aoa which is an abort once around that they can land the orbiter in a uh more safe fashion and there's something else as well on this uh the ground one sequencer is part of the launch processing system we're back now on the countdown so they're on schedule this is the this is the crucial countdown from nine minutes on down let's listen for just a few moments that the commands have been executed eight minutes thirty seconds and counting the primary job of the onboard computers is the check that all of the launch commit criteria such as propellant loads

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criteria such as propellant loads temperatures pressures and other measurements are normal and staying within their prescribed limits okay we're in that we're in the countdown now we'll go through this nine minute continent it'll get crucial down around two minutes again when the computer programs start to check in make sure that everything's all right and they were even giving us one warning that there may be some kind of an alarm in the cockpit because they've got these new pressure suits on that they're wearing and they're worried about the pressure going off a different kind of signal that may set some of those very sensitive alarms five-man crew on board you should meet them because you'll be hearing a lot about them in the next four days and these people are as important as the early pioneers of the american space program because they're trying to get it started again here is the crew then of the space shuttle discovery roger uh transmission program command the discovery crew all pros each has flown on the shuttle at least once four of the five have military backgrounds training has been intense practicing longer on the ground spending more than 400 hours in simulators alone no crew has ever worked harder navy captain rick hough 48 years old as commander he flew on both challenger and discovery i think we're very well trained i think we're ready to fly i think we've been ready to fly forth for several months now 38 year old marine colonel david hillmers is one of three mission specialists on board we can't dwell on what happened in the past or we'll never look forward to the future air force colonel dick covey 42 is pilot he flew on discovery in 1985 all test pilots know that space flight is inherently dangerous as long as we have to ride rockets into earth orbit there's going to be a substantial risk no matter how well you design your solid rocket motors or your main engines there's going to be a risk 38 year old george pinkey nelson mission specialist he's an astronomer mike lounge 41 years old was a former navy pilot like all the others they're all married

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like all the others they're all married they all have children daughter kathy is four years old kathy has several times said daddy you're going to go fly the space shuttle and it's not going to blow up right asking me for some reassurance and once she gets that then it must be okay you know daddy said it wouldn't it won't that's enough for her five astronauts often described as seasoned cool laconic macho the right stuff live astronauts now in place in the space shuttle discovery going through the final moments of the countdown we're now getting very close to what uh is expected to be one of the most important lift-offs in american space history of course an attempt to get the space shuttle program underway once again part of the modification of course of this system is that they now have two escape systems one for the ground one that once they're airborne if they were at where they were for example on the challenger there is now a system that has been put in place that they hope will work we want to show you how that might be put into effect these astronauts are equipped with parachutes and they'll have a space escape pole there's no other way to describe it as kind of a space fire pole in effect they'll go out of the orbiter just like that if they're at uh one green light elsewhere four three all right we're watching all of that with a lot of pros joe engel who's in houston with us this morning and flew in this second space shuttle do you think that that system uh has got a lot of hazard built into it that escape system jody really think that it could work well i no doubt about it it can work tom uh it's been tested and uh they've checked it out thoroughly and for the envelope that it's designed i think it's probably gonna give a real real good assurance that those guys can get out if they get into that situation but they'd have to do that in the few first few moments of the flight wouldn't they because once they got up too high they simply wouldn't be able to use it

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wouldn't be able to use it well uh not necessarily they can glide back to the within the parameters as long as they can get the vehicle back under control glide back into the atmosphere and get up get a stabilized glide uh situation set up then they can get set up to blow the hatch and use the escape system [Music] okay thank you joe engel who will be with us this morning from houston as well all this cost by the way two and a half billion dollars to make these motor modifications that's a small price indeed we're now coming up on uh just under four minutes to the countdown and at this point at this point and the crew is going through a checklist that they have on board there let's listen for a few moments to hugh harris t-minus three minutes 30 seconds all three engines now being moved in a pattern to verify their readiness to uh uh support the ascent flight control after going through their paces they'll be aligned to their start positions we're coming up on the three minute point in the count at t minus two minutes 55 seconds the start of the external tank liquid oxygen pressurization will begin three minutes and counting uh and the gaseous nitrogen purges of the main engines will be terminated those main engines you can see there at the bottom those big cones sticking out from the bottom they're gonna be crucial of course for both uh lift off and then later on seeing those engines in the flight with those close-up nasa cameras we want to tell you that there are a couple of uh crucial sequences coming up now o'hara you've watched this in the past they're gonna have to pressurize the big second the liquid hydrogen tank t-minus two minutes thirty seconds and then when we get down to what about 31 seconds everything goes on automatic in effect automatic the computers take over on board there's no more intervention from the

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there's no more intervention from the firing room it's automatically cut off if there's a problem that's a critical milestone in the countdown in the last 28 seconds all right we're getting ready obviously to deal with the big external tank here yes that's the nose cone that's placed over it to keep any icing off of the tip of the nose cone and that will be removed now and it will just vent to atmosphere they pressurize the tank at this point in time to build up pressure hydrogen force the propellants out when the engines ignite so those big guns have been closed part of the problem of course with the challenger was that it was very cold here overnight on that january in florida in 1986. uh what about launching in adverse weather conditions when there is a cold snap again as there will be well they placed heaters on the solid rocket booster joints this time and drizzling cold weather that should keep them warm enough seconds and counting less than two minutes away from the launch of sts-26 and its crew of five seconds and we have heard that the clock will hold at 31 seconds well that means that there's a hole just before they begin the automatic sequence so that we are anticipating the clock will hold at t minus 31 seconds due to a failure we have not heard what that is yet it's going down that's a normal hold point in the event that it's probably due to the increase in the o2 going above okay with your concurrency the propulsion hydraulic system can hold for six minutes today in order to protect the launch for tomorrow and the apu's have started they will continue to run so if we don't hold any more than six minutes we could reschedule tomorrow if there is a problem that causes us we will not stop the clock uh the orbiter computers have positioned the vent doors uh t minus 31 seconds we have a goal for auto sequence starting followers redundant computers have assumed t minus 23 seconds and counting

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assumed t minus 23 seconds and counting the srb nozzle profile p minus 15. here we go 14. remember the challenger godspeed discovery 11 10. we're go for main engine start 7 6 start 3 2 return to space as discovery clears the tower roger roll discovery crew confirms role program houston now controlling three engines at 104 percent pretty good at us three good fuel cells standing by to begin throttle down to 65 percent he standing legacy engines began to throttle back up at about 59 seconds mark one minute velocity 2300 feet per second altitude 5.9 nautical miles downrange resistance three nautical miles [Music] discovery given ago at throttle up three engines at 104 velocity 3200 feet per second altitude 10.8 nautical miles downrange distance eight nautical miles we've passed a crucial test here gentlemen go to throttle up was the last command that we heard of course on challenger yes we're waiting for the separation of those big solid rocket boosters that you see on either side 25 seconds from solid rocket booster

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25 seconds from solid rocket booster separation they held the orbiter is in place next if everything goes well which it looks like now it will velocity 4 800 feet per second altitude 20 nautical miles downrange distance 19 nautical miles standing by for solid rocket booster separation there they go solid rocket boosters have separated minutes 20 seconds three engines still running 104 5600 feet per second velocity 31.8 nautical miles altitude downrange distance 38 nautical miles nice to hear the cheers in the background oh yeah there it's a it's a very towing moment here are you still running at normal speed are you reveal hard to be objective very hard to be objective that looks very clean indeed mr o'hara you're our expert uh that was a pretty clean launch shortly from the campus we've been waiting for this a long time in houston are really excited of course we'll be totally 62. when they land at edwards air force base a lot of condition ahead of us this has been a great launch well we've still got to hit the orbit here we've got we've got we've got work to do yet today absolutely but they got through the critical area with the light winds the computer programs held everything is looking good the solid rocket boosters were all in place and they separated off and that's launch pad 39b and standing outside is nbc's robert bazelle who got the full effect once again of the sound and the fury and in this case the joyful reverberation of the space shuttle discovery bob tom like you said it's a little bit difficult to be objective uh first there was when the countdown clock went past 31 seconds which means that the onboard computers took over in the great cheer that went up

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that went up with all the employees here at the kennedy space center that was fantastic and of course the moment of liftoff when we felt the enormous power of discovery and then when that gopher throttle up everybody holding their breath we went past it america is back in space i must admit i feel very happy and it was really thrilling it was one of the most thrilling things has ever happened to me as a reporter well there are many questions still about the american space program but from a purely human point of view who could not be thrilled that this has worked today because we have all lived with us in our own way all of us people who would never forget the challenger now they can remember this launch today of the discovery an aptly named shuttle that is on his way to orbit and things are looking very good at this time we want to tell you that this mission will be four days altogether they're going to launch primarily a relay and tracking data system satellite up there on the first day but what they're going to do most of all is kind of get their own confidence back and reinstall the confidence of the american people in the space program joe engel and houston you were the as i said earlier with dick truly as your partner you went up on the second of these space shuttle launches what did you think of today's i tell you tom that was that was magnificent it's a real tribute to the people not just the thousands of people that work to get the shuttle ready to go again but particularly that launch team after better than two and a half years to go through a very complex launch procedure like that and pull it off the first time through that's that's a tremendous tribute you were a crack pilot so was dick truly of course and rick houck who is in the commander of this flight today is uh one of the very best in the astronaut corps do you think we're going to have to keep the standards at that level or do you think that down the road again that we can begin to permit people to go up in the shuttle who are not necessarily uh best of breed in the astronaut course civilians and others well i don't think there's anything magic in going up in the shuttle uh tom i think that uh for for sure it has the considerations have to be made as to uh why those people are going and and to

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uh why those people are going and and to accept the fact that as we've said so many times there's a lot of risk involved in the program and i think that was that was the biggest shock to everybody we had people on board that were not professional astronauts and i think that shocked very a good number of folks okay joe engel thanks very much for being with us this morning uh we want to tell you that everything is looking good right now for the space shuttle discovery on its launch today it got off on a small delay about 1 hour and 35 minutes altogether that was a result of weather conditions no problems on board the system itself and a man who's getting in place now flew on the equivalent of the model t in the american space program somehow i resemble that remark senator john glenn of ohio of course was the first american uh to orbit the earth and he gave us his own thrill when you did that john how many years ago was that now well a few too many i guess was 26 years ago last february so it's getting to be ancient history by now but this was a great morning here it really went well senator what about the future of the american space program a lot of people believe that we've got too much of our resources tied up in this space shuttle system too much tied up in a manned space program that we can do it more efficiently in terms of these launches and we ought to be looking at things like space stations and more space exploration well i think there'll always be a balance between the two programs i think there's some missions can obviously be performed better on an unmanned vehicle a single launch of whatever the lighter payload is but this is a very versatile vehicle and i have favored the shuttle approach in the word go i think they're complementary programs man and unmanned wherever people learn to travel in space we're always going to precede our visits there with unmanned spacecraft to give us as much information as we can about the environment we're going into and that's the role of that but men and women going into space can work in a laboratory of space such as the orbiting space laboratory that we'll have up there one of these days in the mid 90s and do far more it's like if you think on earth on a laboratory could you remotely from outside the laboratory do as well as going in the lab and conducting the experiments yourself the

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conducting the experiments yourself the answer is obviously no so there's a place for both programs but we don't seem to be as a nation thinking very carefully about where we want to go in space and how we want to get there here we're in the middle of a presidential campaign it never comes up well it came up both of the candidates this time made very good solid policy statements on their support for the permanently orbiting space station i find that encouraging i just hope whoever's in there follows it up with good budget responses more so than this past administration has done they've said all the right things but the budget support has been somewhat weak on occasion [Music] this kind of a successful launch today and all the romance that comes with it and the human drama that probably helps in terms of getting the american people back behind it again it helps but you know tom ever since i was in the program myself back in those days i have stressed the research return that's going to be of value to everybody right here on earth senator we're just going to show you what's going on up there right now if i can just engage you in this because this is we're going to listen to nasa the big external tank is uh clean engine cut off confirmed and that means every three main engines have now shut down as programmed another very crucial stop along the way as they go into the uh they get themselves into a position to go into all that no homes one not required don't have to make the maneuver they went more straight up this time you may have noticed because they inserted themselves in a different configuration they wanted to reduce the number of maneuvers that they might normally have to make sure they could go right straight up and get into an orbit without much efficiencies by for external tank separation standing by we're standing by for external tank separation we were a little premature in our simulation there that has not yet happened uh ours doesn't count this one does

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discovery your goal for abu shut down on time the auxiliary power units is what they're shutting down on time everything has met the timeline so far no problems that we've been able to hear the engines let's just get the external tank separated if we can which should come at any moment now that's that big brown tank that fuels those main engines which have now been shut down but then you've got to get rid of it and when they get rid of it it breaks up and it falls into the ocean over a long wide path pieces of it have i don't know whether they've ever been recovered or not there was some concern in the early days that they would uh rain across australia that that really didn't happen it breaks up into so many small pieces that it just generally goes into the ocean the solid rocket boosters of course are recovered senator glenn you were saying that i raised the proposition that if this goes well from a human point of view people will get involved in the romance of space again do you think that we invest too much in the romance of space that's a factor and the romance of space seems to come in as we go into the first whether it's al shepard's first sub logo or any other first steps that occurred beyond that but you know the value of the program is basic research and if this nation is a product of anything it's the basic research that we've been willing to support through the years that plus i don't think most americans want to see a second place in space space has been a focal point of attention the rest of the world it is been a demonstration of our superiority in science and technology and what we have found are tens upon thousands of kids wanting to come here to get their education now that results in political followership around the world and i don't want to see the children of the world aspiring to go to patrice lumumba university in the soviet union as opposed to coming to florida caltech

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as opposed to coming to florida caltech ohio state or wherever in this country so there's that political aspect of the space program also all right senator we're going to look at that launch one more time good i'd like to see it again okay let's uh let's take a look now this is the successful launch now about 12 minutes ago here at the kennedy space three two one zero and liftoff lifts up americans returned to space as discovery clears the tower roger roll discovery crew confirms role program houston now controlling three engines 104 very good atus for good fuel cells speed as the spacecraft passes through max cube well whatever you think of the space program uh for my money at least that is one of the most memorable and striking pictures that anyone can ever see the absolute epitome of high technology uh all that power all those computers on board and then of course five highly skilled american astronauts their hands on the controls going into space it really is the definition of measurements nautical miles downrange resistance three nautical miles discovery go at throttle up senator glenn thanks very much for being with us this morning we're gonna get out of houston now and we have nbc's dan molina standing by with an active member of the astronaut corps who's watching us with uh nbc news today dan good morning tom i'm here with colonel john blaha john is someone who became familiar to us over the years as a capcom in mission control the capcom being the person who communicates back and forth with shuttles in flight and colonel blaha is

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shuttles in flight and colonel blaha is now training for an upcoming flight himself and uh i know that you were quite thrilled to see that liftoff successful this morning it was fantastic dan the primary task of this flight is the deployment of the tvr satellite the tracking and data relay satellite system now there is one operating right now there was one on board challenger when challenger exploded this end will be the second in a series of three that will operate for very important reasons today correct dan can you summarize yes tom yes we're just going to break away for a moment we want to go to nasa because we want to hear the celebration that is going on there fine well let's start with wow that was really something it's been a long wait two and a half years or a little bit better than that you guys have been working your tails off for the last i don't know how long long hours overtime and fixed all the problems ready to go when it's time to go we went jim all i can say is that the nation owes you a lot and will continue to owe you a lot in the in the months and years to come this is the first of a new era as we've said before congratulations for a job well done that's james fletcher who is the chief administrator of nasa and of course there was an enormous shakeup uh the length and breadth of that organization following the challenges the lines of authority now are much more clearly drawn including the decision today whether to make the launch dick truly and robert crippen who were two veteran astronauts themselves were both on site as it were truly is a navy admiral who now lives in washington works out of there he was in charge of the flight operations crippen was the guy who was on the ground here today and he was making the final decision about whether or not they would launch and he was an active he had a very active role obviously in the decision about how they would

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in the decision about how they would make the modifications the astronauts after the challenger explosion decided that they absolutely had to get involved with us now as someone who's been following all of us with more than passing interest is dr larsdon from george washington university in washington d.c good morning good morning um what about the space policy of this country that's the area that interests you most of all and you've been studying it well the launch of the shuttle gets us back in the right direction it gets this immense psychological burden off our back of of having failed once and correcting that failure now we have to look toward the future we have to see whether the shuttle can make 18 missions before the end of 1990 whether we're going to proceed with a permanently manned space station and for what reasons the kind of reasons that senator glenn talked to and i think ultimately the broadest human adventure of expanding human activity beyond the immediate vicinity of this planet out the moon ultimately to mars you think the american people are committed to spending that kind of money i think the american people expect the program to head down that direction the money involved in absolute terms is large in terms of a percentage of a gnp we're spending less than one-fourth of the time money we spend at the time of apollo uh the resources are there for good ideas dr washington from the space policy institute and george washington george washington university thank you very much for being with us this morning thank you we want to tell you that everything remains on schedule uh with the space shuttle discovery itself it uh is expected to go into orbit at about 12 20 today eastern daylight time it'll go into an orbit that's about 160 nautical miles by 161 nautical miles that's 184 by 185 if you make that conversion and later this afternoon it will be deploying the satellite that is carrying in the payload we have to go back through that again you'll remember that this opens up here on top these payload doors open up and then they've got a little launching motor in there that will put out this very important satellite

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put out this very important satellite that we have here which is the tracking and relay data satellite that's used by other space programs so that they can communicate back to earth one of those was destroyed when we have the challenger explosion so that's what's uh ahead this afternoon four days of this flight to land at edwards air force base in california you'll remember that as well that's the home originally of chuck yeager and he'll probably be there for the landing let's go back to houston now dan molina is there dan yes tom we were discussing that sequence during which the tracking and data relay satellite will be deployed and uh john blaha with me is somebody who over the years felt the need for that uh that satellite to be deployed and for a system that would allow space shuttles to communicate with mission control over a much longer period of time much more constantly than they're able to now i know that has been a big big headache for you over the years absolutely dan uh getting uh two tracking and data relay satellites up in orbit will give us a communication capability which will expand the capabilities of the shuttle and the future payloads which we plan to put up the first tdrs tracking data relay satellite that was launched had problems when it was first launched it's only operating uh with a portion of its total capacity right now so it has been very slow getting this whole system up to full speed has it done that's correct dan currently the uplink capability of ku band doesn't work with the current satellite that's up there and we hope that this one plus the one which the crew that i'm with on the flight in february will give us that full capability now the deployment sequence for this satellite will occupy the crew beginning almost immediately they will begin the sequence sequence which will result in the launch of that satellite uh to go through that just briefly it is a it is a deployment sequence that first begins when the payload day doors open and then that satellite is

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doors open and then that satellite is tilted up into a position where it will be sprung out into space is that correct that's correct and that that activity will take place the raising about four hours from now and the deployment about six hours from now and then the satellite will move a safe distance away from the spacecraft the bottom of the spacecraft will be pointed toward the satellite when it ignites its engine and moves out into space and tom hopefully that will go off without any hitches okay thank you very much dan molina who is in houston today and back here at the kennedy space center with me now is joe kerwin joe we've only got about uh 30 seconds left or so what do you think next year at this time we'll be launching uh on a very regular basis well we're going to have to work back into it but the reason this launch was so expensive is because it took so long to get it airborne the more often we launch the more the cost will will will come down and getting that railroad running on a regular schedule again i'm sure is our top priority thanks very much joe kerwin for being with us al o'hara and all the people who helped us today special discovery has been launched going into orbit in about 20 minutes i'm tom brokaw we'll be here all day long bringing you up to date on what's going on and i'll see you of course tonight on nbc nightly news from the kennedy space center for now good morning and good afternoon the clock will hold at t minus 31 seconds due to a failure we have not heard what that is yet it's going down probably due to the increase in the o2 going in from the suit okay with your concurrence we'll clear the air force americans return to space as discovery clears the tower program roger roll discovery crew confirms role program houston now controlling monday rise and shine with today

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